

WHAT IS CLAIMED IS:

- 1 1. A non-aqueous electrolytic solution comprising glycerine and at least one
2 soluble salt formed by the neutralization of at least one non-halogen-containing
3 organic or inorganic acid anion with at least one alkali metal, ammonium, or
4 protonated amine cation; wherein the acid anion is derived from an acid having a pKa
5 lower than phosphoric acid.
- 1 2. The non-aqueous electrolytic solution according to claim 1 wherein the soluble
2 salt is ammonium nitrate, dimethyl ethanolamine nitrate, dimethyl ethanolamine
3 sulfate, dimethylethoxy ethanolamine nitrate, or dimethylethoxy ethanolamine sulfate.
- 1 3. The non-aqueous electrolytic solution according to claim 2 wherein the soluble
2 salt is ammonium nitrate.
- 1 4. The non-aqueous electrolytic solution according to claim 1 wherein water
2 content is less than 2 wt%, based on total weight of the solution.
- 1 5. The non-aqueous electrolytic solution according to claim 4 wherein water
2 content is less than 1 wt%, based on total weight of the solution.
- 1 6. The non-aqueous electrolytic solution according to claim 1 comprising about
2 0.5 wt% to about 15 wt% of the soluble salt, based on total weight of the solution.
- 1 7. The non-aqueous electrolytic solution according to claim 6 comprising about
2 5 wt% to about 10 wt% of the soluble salt , based on total weight of the solution.
- 1 8. A non-aqueous electrolytic solution comprising glycerine and ammonium
2 nitrate.
- 1 9. A method of anodizing an anode comprising anodizing at a temperature of about
2 60°C to about 125°C until a uniform anodic oxide film is formed over the entire anode

1 surface with the non-aqueous electrolytic solution according to claim 1; wherein the
2 anode comprises a valve metal-derived nitride, sub-nitride, oxide, or sub-oxide, or an
3 alloy thereof, a mixture thereof, or a metallic glass composition thereof.

1 10. The method according to claim 9 wherein the temperature is about 80°C to
2 about 95°C.

1 11. The method according to claim 10 wherein the temperature is about 84°C to
2 about 92°C.

1 12. The method according to claim 9 wherein the anode comprises tantalum nitride,
2 niobium nitride, or titanium nitride.

1 13. A capacitor comprising an anode prepared from a valve-metal derivative
2 powder and a non-aqueous electrolytic solution comprising glycerine and at least one
3 soluble salt formed by the neutralization of at least one non-halogen-containing
4 organic or inorganic acid anion with at least one alkali metal, ammonium, or
5 protonated amine cation; wherein the acid anion is derived from an acid having a pKa
6 lower than phosphoric acid, and wherein the valve-metal derivative powder is a valve
7 metal-derived nitride, sub-nitride, oxide, or sub-oxide, or an alloy thereof, a mixture
8 thereof, or a metallic glass composition thereof.

1 14. The capacitor according to claim 13 wherein the soluble salt is ammonium
2 nitrate, dimethyl ethanolamine nitrate, dimethyl ethanolamine sulfate, dimethylethoxy
3 ethanolamine nitrate, or dimethylethoxy ethanolamine sulfate.

1 15. The capacitor according to claim 14 wherein the soluble salt is ammonium
2 nitrate.

1 16. The capacitor according to claim 13 wherein water content of the solution is less
2 than 2 wt%, based on total weight of the solution.

1 17. The capacitor according to claim 16 wherein water content of the solution is less
2 than 1 wt%, based on total weight of the solution.

1 18. The capacitor according to claim 13 wherein the solution comprises about 0.5
2 wt% to about 15 wt% of the soluble salt, based on total weight of the solution.

1 19. The capacitor according to claim 18 wherein the solution comprises about 5
2 wt% to about 10 wt% of the soluble salt, based on total weight of the solution.

1 20. The capacitor according to claim 13 wherein the valve-metal derivative is
2 tantalum nitride, niobium nitride, or titanium nitride.